

Flight Scientist Report
Sunday 03/13/2022 ACTIVATE RF138

Flight Type: Statistical Survey Flight

Flight Route: KLF1 - ATLIC - N3742/W07415 - ZIBUT - N3516/W06937 - ZIBUT - ATLIC - KLF1

Special Notes: Second of two flights today. This flight was designed to try to fly in a Lagrangian way to go as far as we can to study evolution of cold air outbreak cloud field. We tried to sample upwind clear air feeding the cloud field by getting into a warning area northwest of ZIBUT.

King Air

Pilot report (Wusk):

Second flight of a two flight day with HU. Planned as KLF1 ATLIC OUTES 3737N07403W ZIBUT 3530N07006W ZIBUT ATLIC KLF1. UC took off first, coordinated with Giant Killer to get direct to the lat long inside W-386. Picked up track to the SE. Made TP ahead of HU. HU passed UC on the way NW, and quickly out ran the UC once inside ZIBUT to home. Strong jet stream winds at FL280. Crew was Jamison, Wusk, Seaman.

Flight scientist report (Seaman):

RF138

3/13/2022 Flight 2 of 2

Takeoff: 17:33 utc

Landing: 21:22 utc

Ops Notes:

Uc12 led by about 10 minutes going into turn around point. Falcon passed uc12 on return home.

Instrument notes:

All instruments operated nominally. HSRL-2 Cals and baseline done in endpoint turn.

Science notes:

Cloud deck on main leg at roughly 6000 ft.

Sonde drops:

- 1) N3742/W07415
- 2) Turnaround at end
- 3) halfway from turnaround to N3742/W07415

Falcon

Pilot report (Slover):

ACTIVATE Cold Air Outbreak research. Route was KLFI - ATLIC - N3742/W07415 - ZIBUT - N3516/W06937 - ZIBUT - ATLIC - KLFI. Research was statistical survey. Over gross weight sortie.

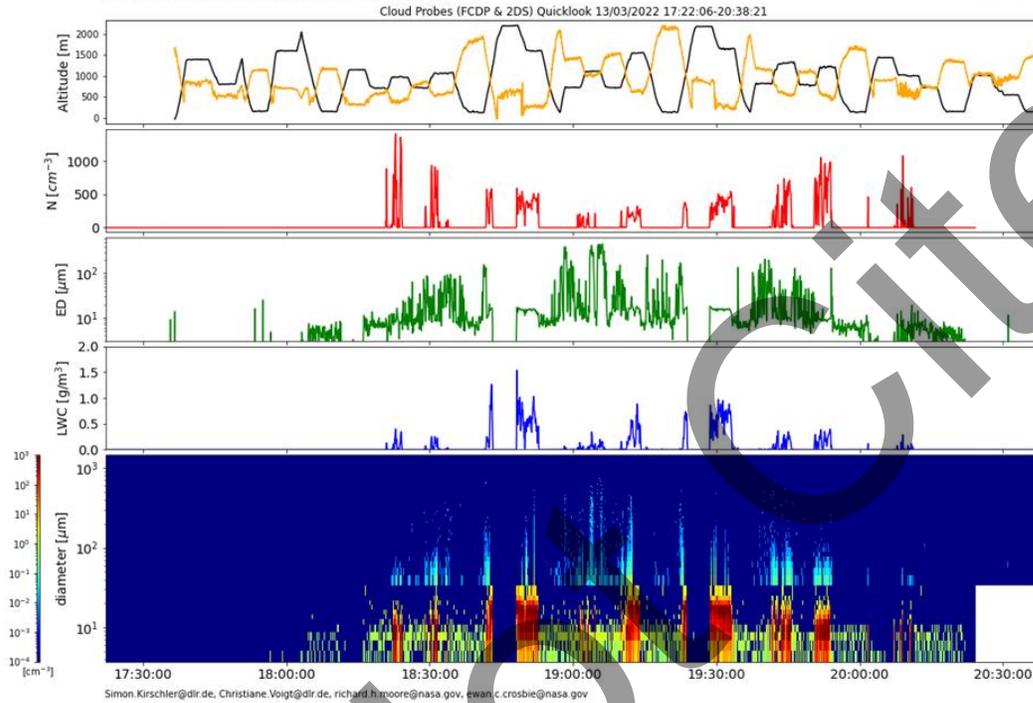
Flight scientist report (Crosbie):

Cold air outbreak stat survey ZIBUT-SE with upwind sampling in W-area. Clear air sampling was conducted in the upwind region. The cloud edge had migrated further offshore from the morning as forecast, with boundary layer winds easing and backing to the WSW. The sea state west of ZIBUT was much calmer than the morning. Clouds followed a similar pattern to the morning, thickening to the east with near overcast conditions east of ZIBUT. Icing was a similar problem in the afternoon eased only by the fact that in-cloud legs were 3 min compared to the WALL legs of the morning. The trend of warming and stabilization continued through the flight with the cloud edge migrating further east on the onbound leg.

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie

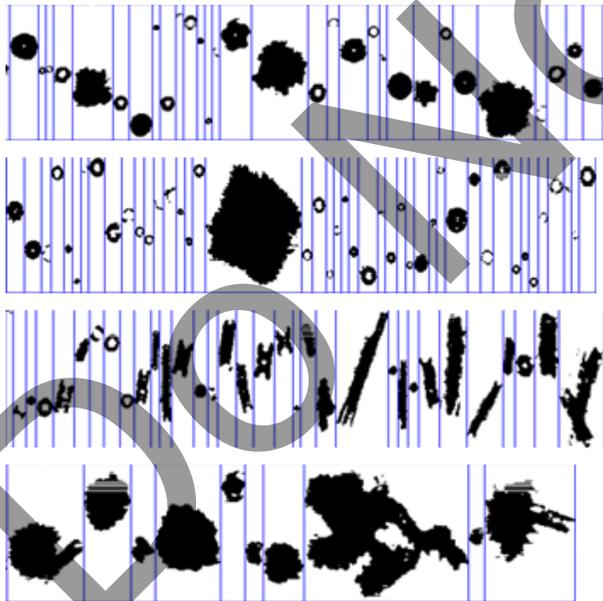
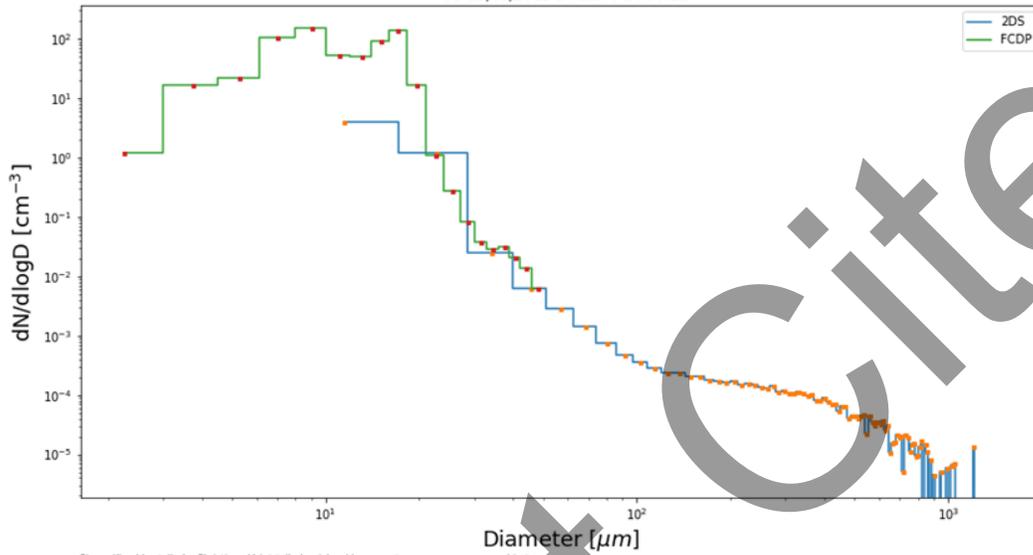


PSD ACTIVATE

preliminary data, only for quicklook use
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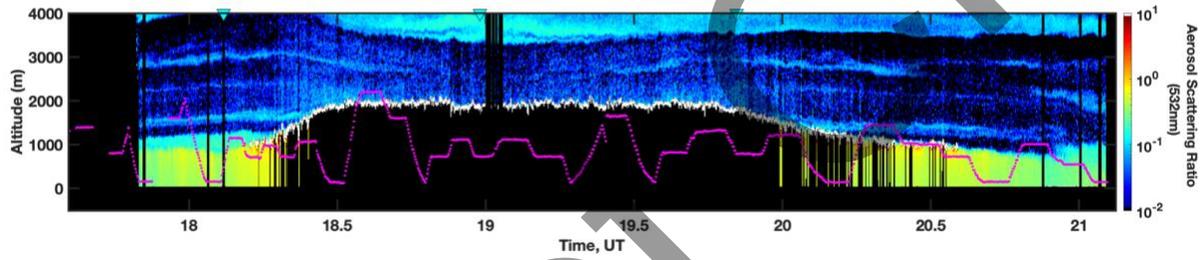
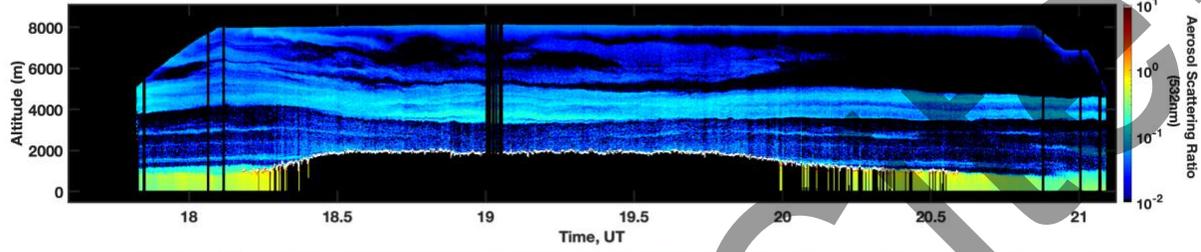
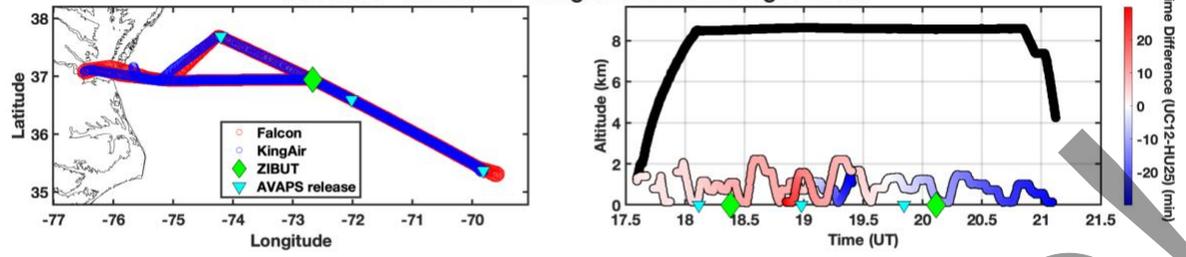


PSD 13/03/2022 17:22:06-20:38:21



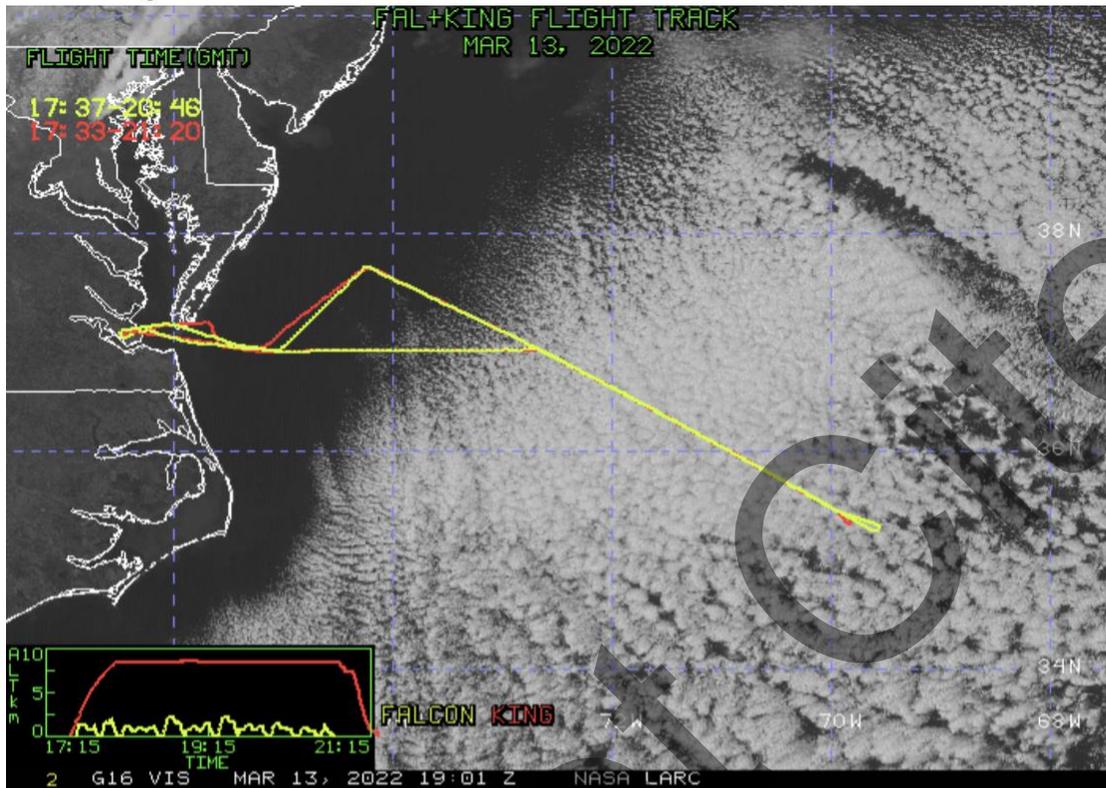
Mixed phase clouds with dominantly Ice Precip.

20220313 - ACTIVATE - KingAir and Falcon flight tracks

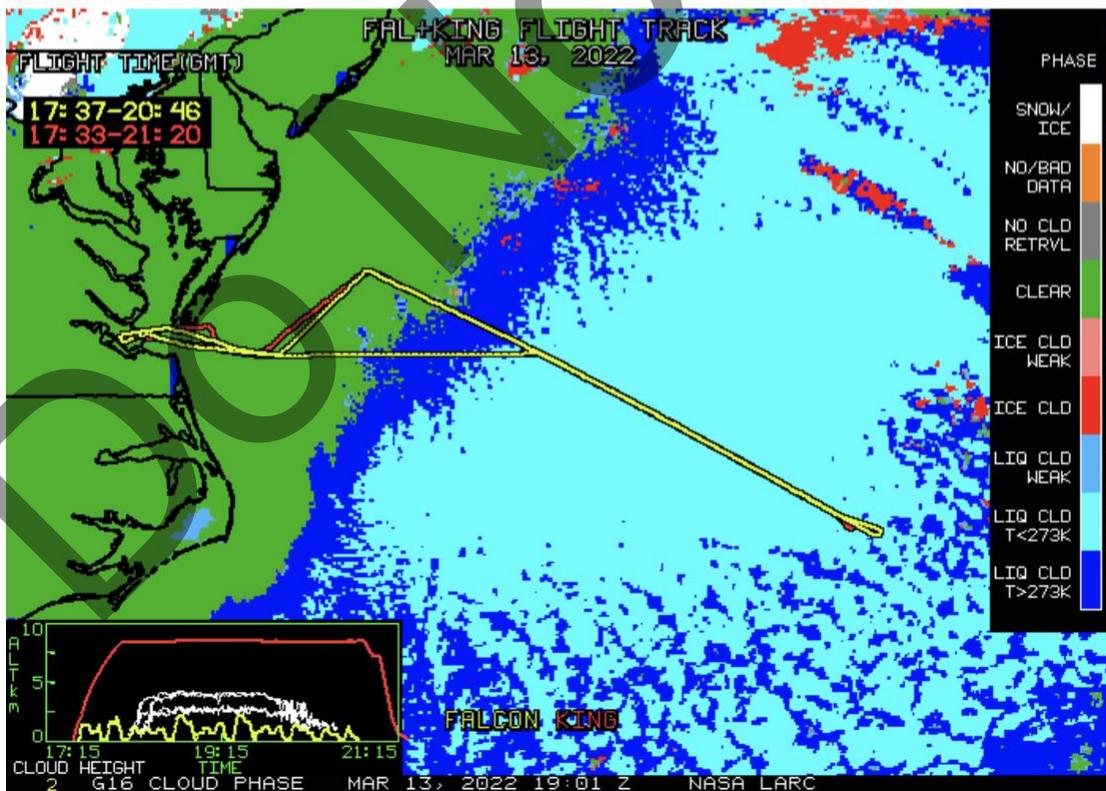


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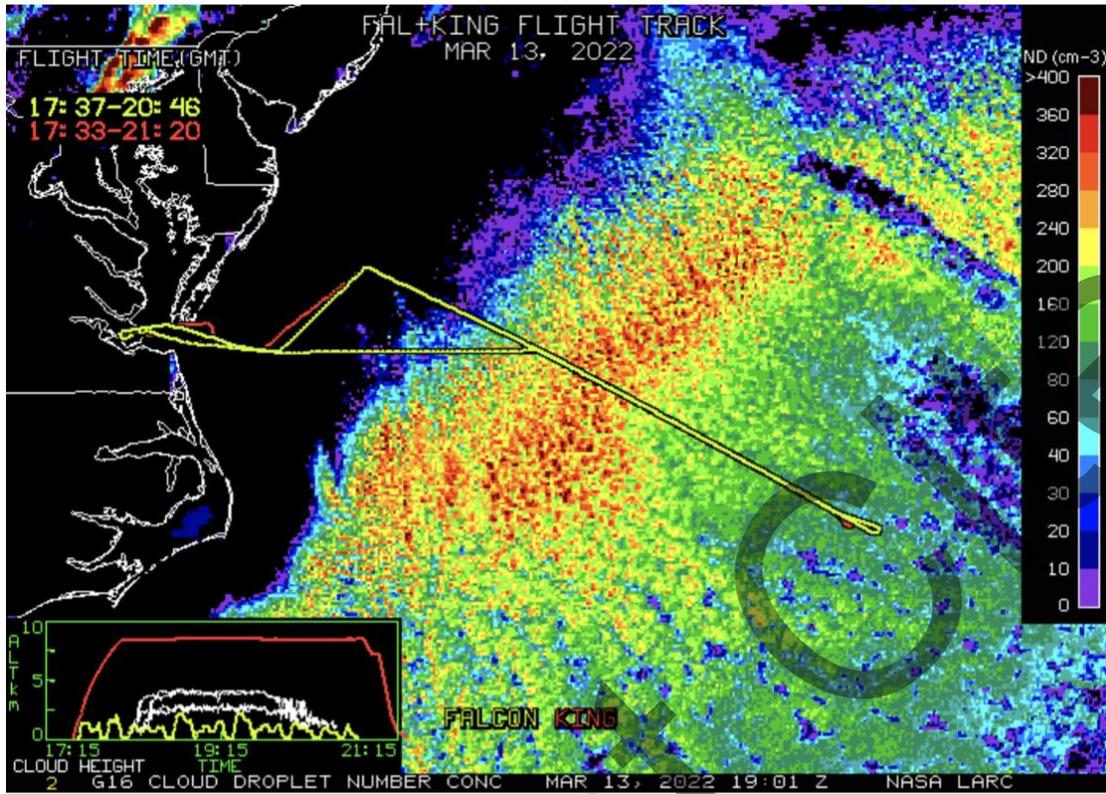
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 138, 19:01 UTC Mar 13, 2022
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

